

An aerial view of a city, likely New York City, with a network of glowing white lines and nodes overlaid on the image, suggesting a global or interconnected network. The lines connect various points across the city, including skyscrapers and a river.

# Thinking Open: A Hybrid Approach to Implementing Open GIS

November 2017

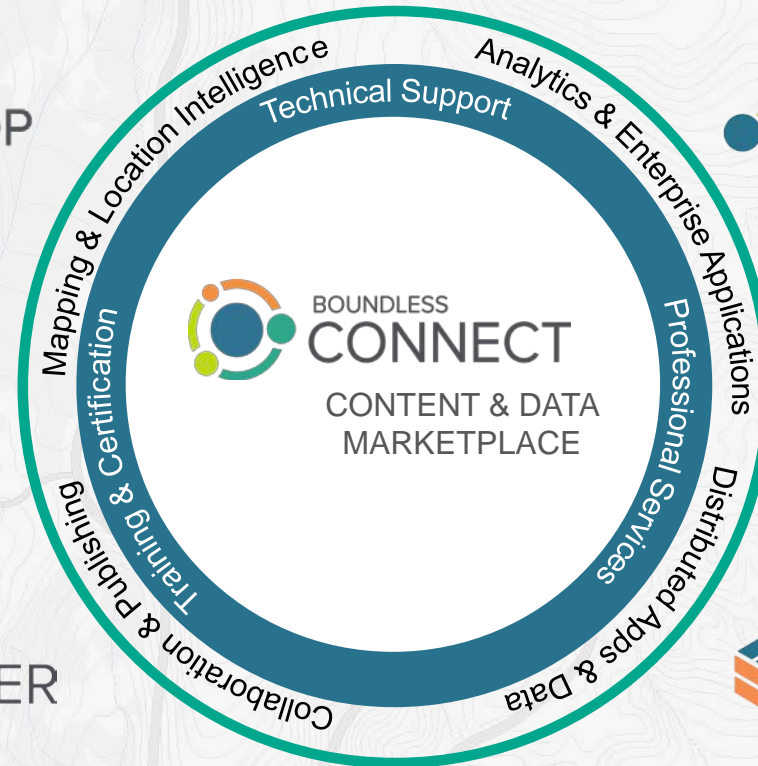




# Boundless

The Boundless Open Ecosystem

- Maximize the value of your location data
- Designed for modern IT architectures
- No credits or named user accounts
- Work on-premise, or in the cloud
- Scale without penalty



Boundless

Open | Scalable | Flexible | Affordable

[boundlessgeo.com](https://boundlessgeo.com)

- My background
  - GIS Technician / GIS Analyst (2000 – 2007)
  - Freelance web development, focused on mapping applications (2007-2011)
  - Project manager / jack-of-all – geospatial web applications built on open-source software (2011 – 2017)
  - Solutions at Boundless



# Open Source

**Open-source software (OSS)** is computer software with its **source code** made available with a **license** in which the copyright holder provides the rights to study, change, and distribute the software to anyone and for any purpose.

- Wikipedia, November 2017



[OSS] ...generates an increasingly more diverse scope of design perspective than any one company is capable of developing and sustaining long term.

- Wikipedia, November 2017

Vibrant community

Fast development

Cutting-edge technology

Algorithmic transparency



# Free...



Free...  
as in puppy.





# Boundless

Our World is Open

- Veterinarian
- Food
- Walking
- Attention
- Software updates
- Server health
- Training
- Bug fixes



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- Lower total cost of ownership
  - No license fee
  - Internal expertise vs. paid support

Compatibility with modern cloud  
architectures and DevOps workflows  
(hint: it's all Linux-based)



Browser / Mobile  
Clients



Desktop Clients



Map / Application  
Servers



Big Data / Cloud  
Servers



Database /  
Storage Servers



# Boundless

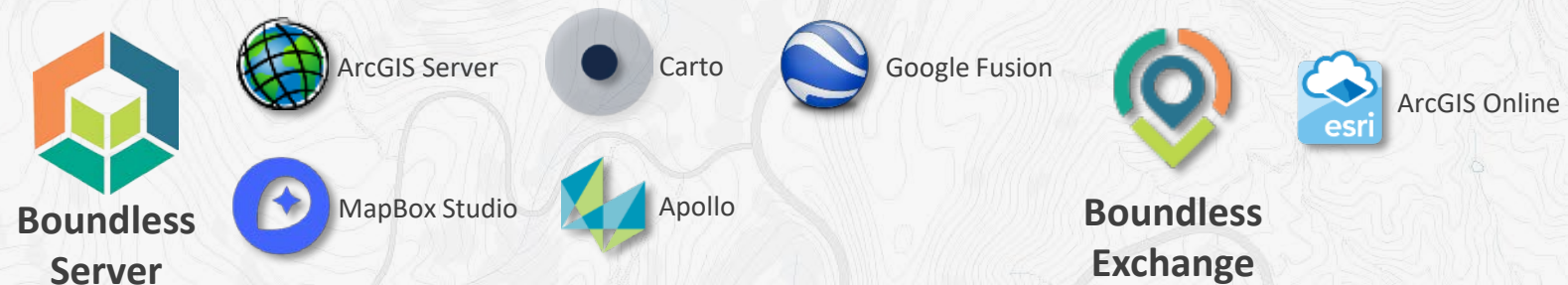
Boundless Encourages Hybrid Architectures



User Interface



Server/Cloud



Database/Server



Boundless

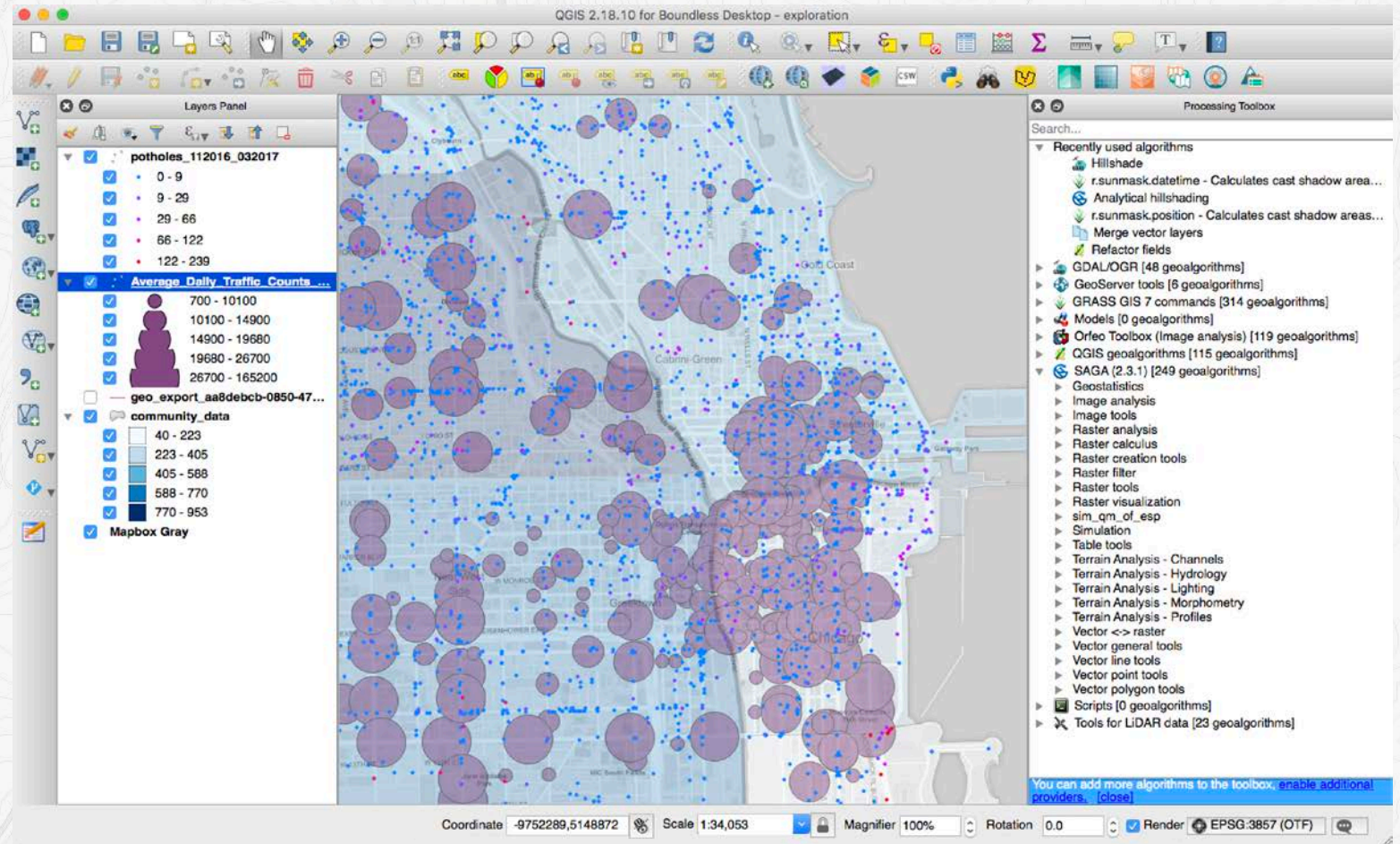
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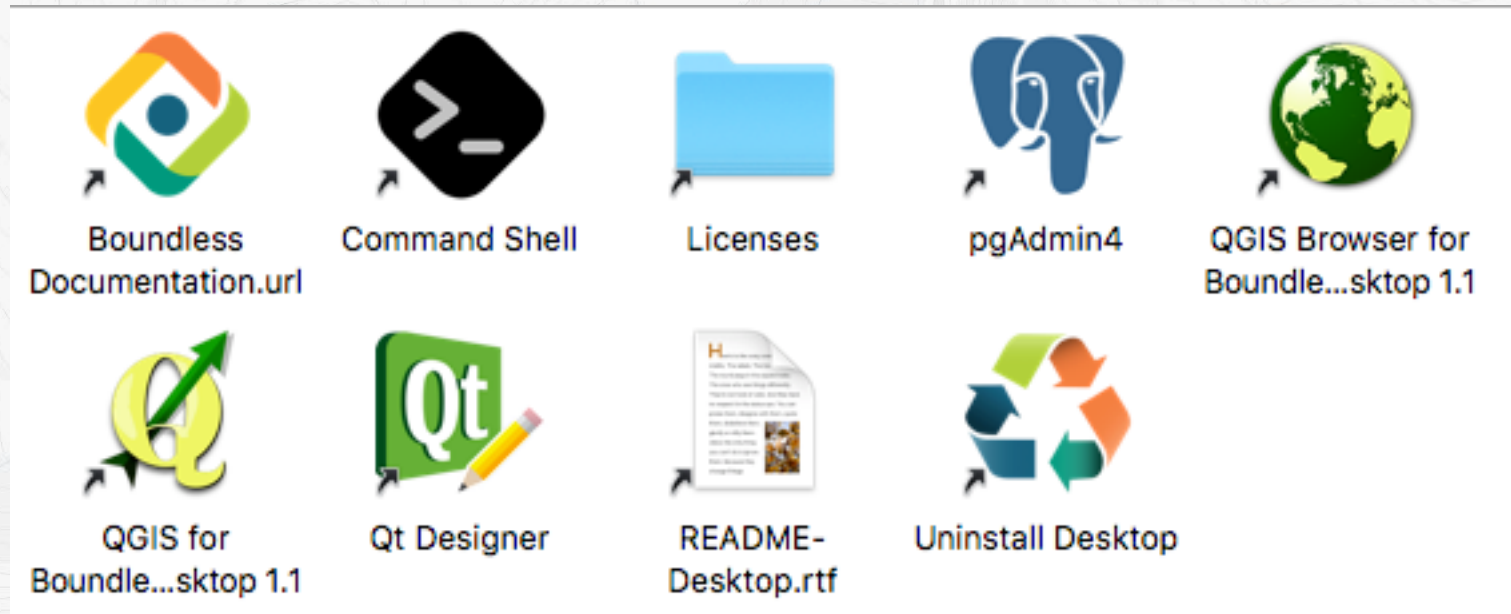


# Desktop









# Database





pgAdmin 4

File Object Tools Help

Browser

- Extensions
- Foreign Data Wrappers
- Languages
- Schemas (1)
  - public
    - Collations
    - Domains
    - FTS Configurations
    - FTS Dictionaries
    - FTS Parsers
    - FTS Templates
    - Foreign Tables
    - Functions
    - Materialized Views
    - Sequences
    - Tables (4)
      - communities
      - potholes\_112016\_032017
      - spatial\_ref\_sys
      - wards
    - Trigger Functions
    - Types
    - Views
- got
- postgres
- Login/Group Roles
- Tablespaces

Wilson2

Dashboard Properties SQL Statistics Dependencies Dependents Query-1 \*

chicago on postgres@Local Suite 4.10

```
1 SELECT * FROM potholes_112016_032017 LIMIT 50;
```

Data Output Explain Messages History

	id integer	geom geometry	creation_old character varying	status character varying	completion_old character varying
	479	0101000020E6100000A5...	11/10/2016	Completed	11/30/2016
	4	0101000020E61000003C...	11/01/2016	Completed	11/01/2016
	1590	0101000020E6100000B0...	12/06/2016	Completed	02/27/2017
	5	0101000020E610000038...	11/01/2016	Completed	11/01/2016
	6	0101000020E6100000DC...	11/01/2016	Completed	11/01/2016
	7	0101000020E6100000BA...	11/01/2016	Completed	11/01/2016
	8	0101000020E61000000C...	11/01/2016	Completed	11/01/2016
	9	0101000020E61000002D...	11/01/2016	Completed	11/01/2016
	2997	[null]	12/24/2016	Completed	03/10/2017
	21432	0101000020E6100000EE...	04/11/2017	Open	[null]
	10	0101000020E6100000E7...	11/01/2016	Completed	11/01/2016
	11	0101000020E6100000F8...	11/01/2016	Completed	11/01/2016
	4305	0101000020E6100000D8...	01/06/2017	Completed	01/17/2017
	12	0101000020E61000007A...	11/01/2016	Completed	11/01/2016
	13	0101000020E610000015...	11/01/2016	Completed	11/01/2016

# Server







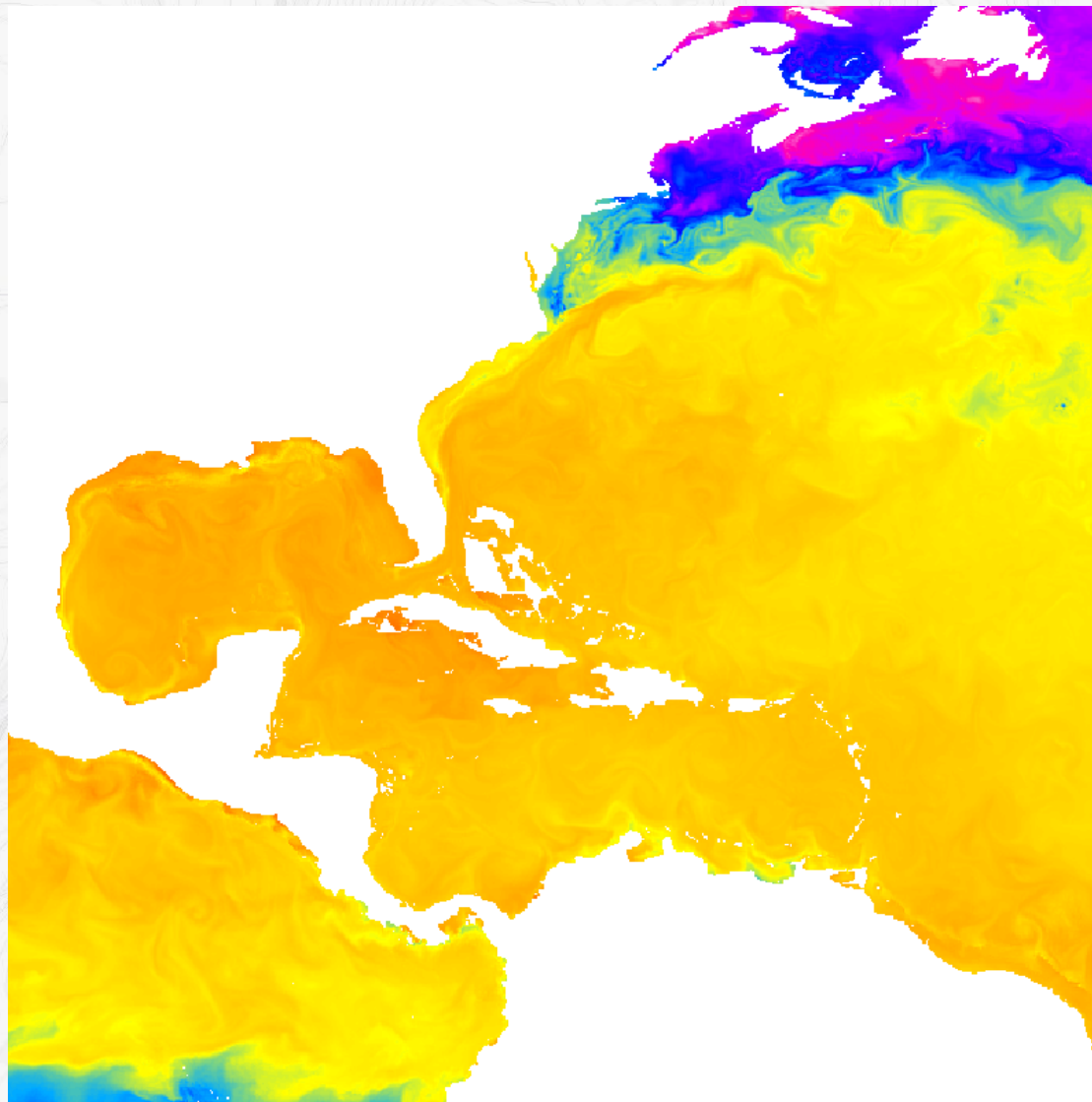


# Boundless

Our World is Open



## GeoServer



Boundless

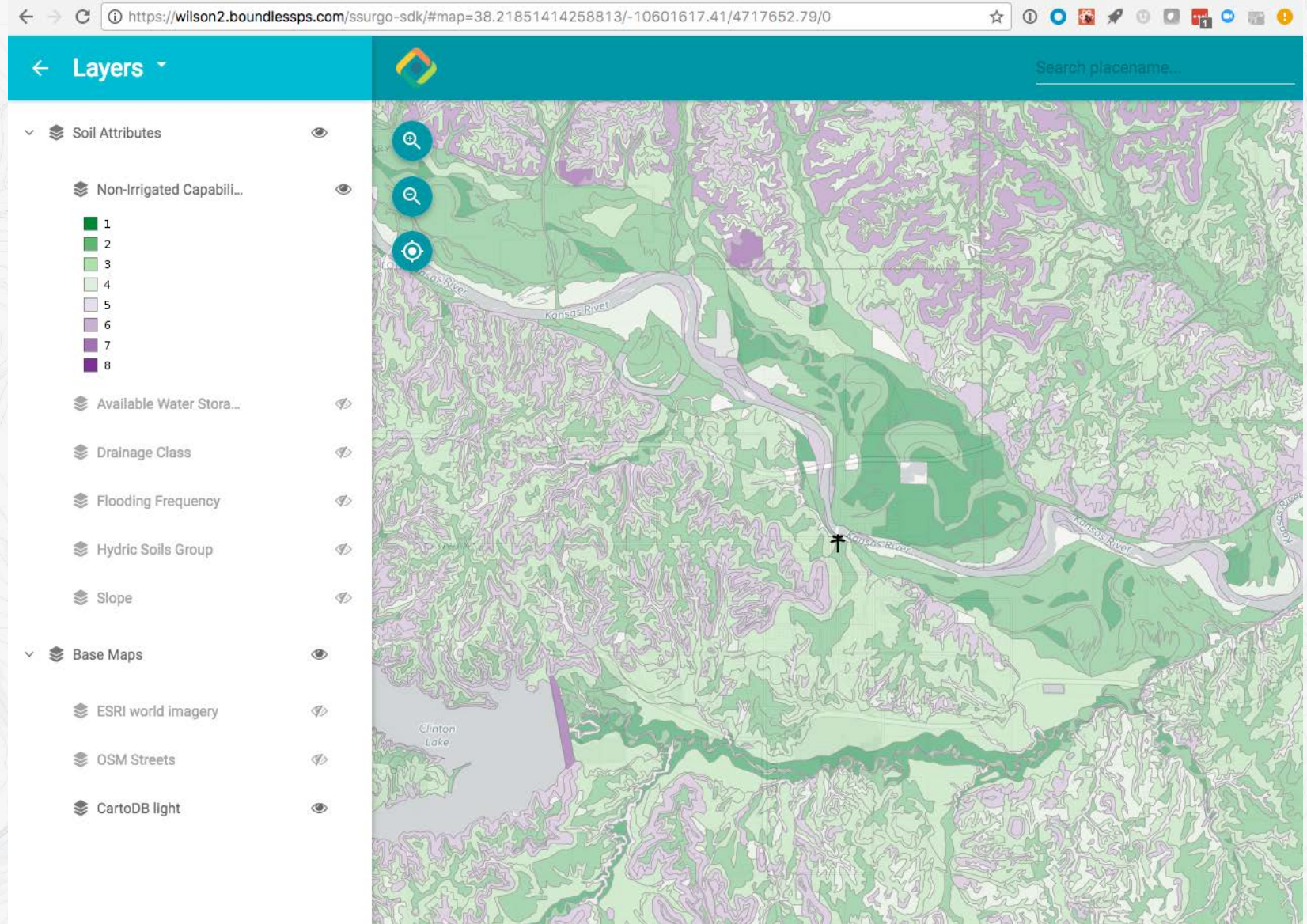
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# Browser





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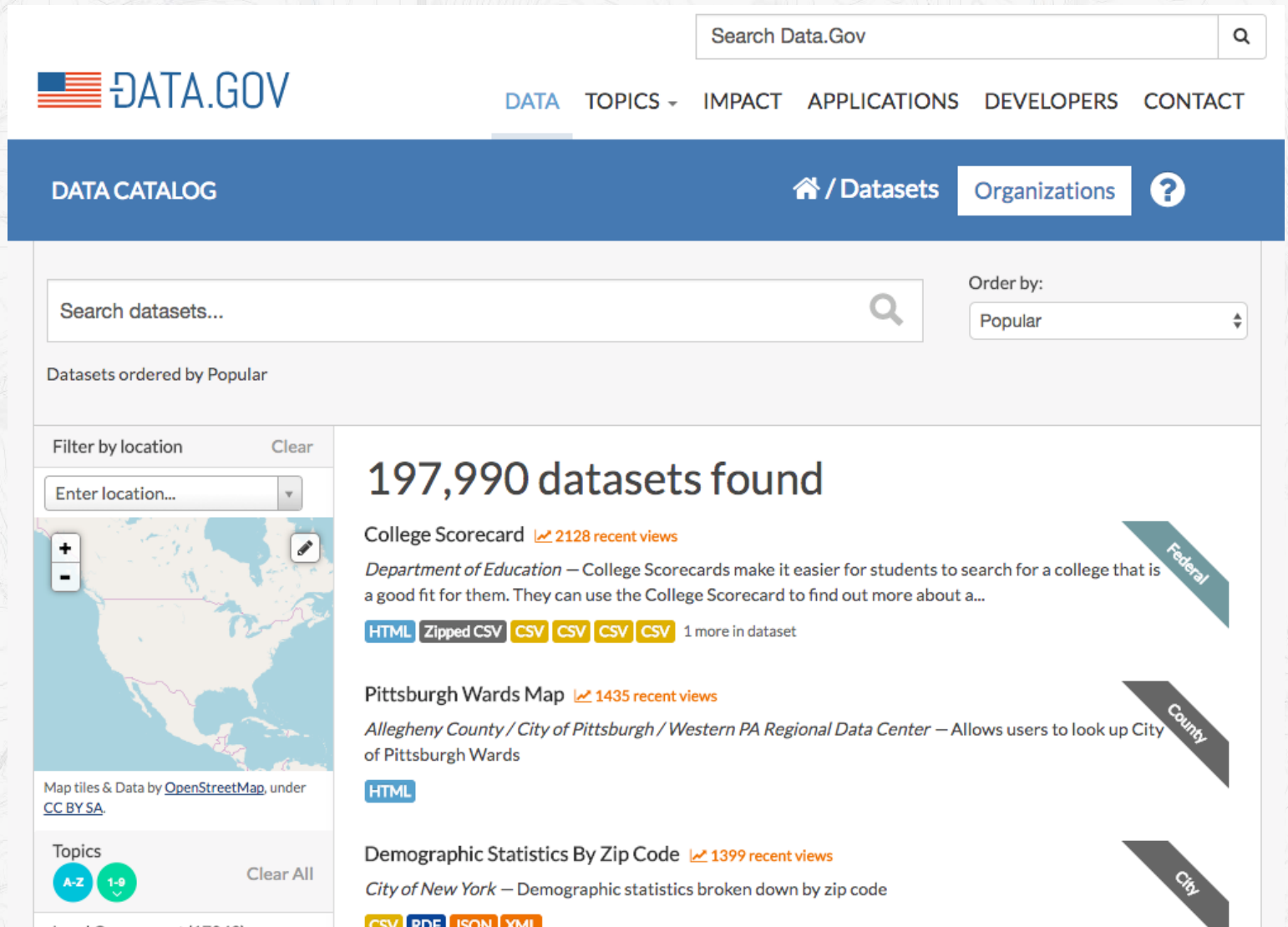


# Big Data





# Open Data



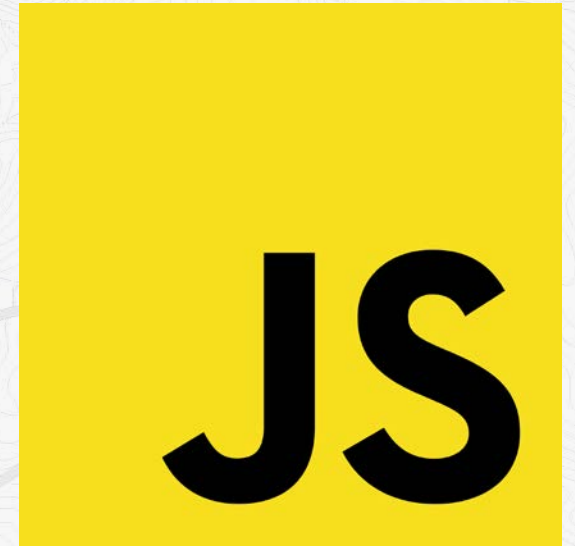
The screenshot shows the Data.gov homepage. At the top, there's a search bar labeled "Search Data.Gov" and a navigation menu with links: DATA, TOPICS, IMPACT, APPLICATIONS, DEVELOPERS, and CONTACT. Below this is a blue header bar with "DATA CATALOG" on the left and navigation links for "/ Datasets", "Organizations", and a help icon. The main content area features a search bar labeled "Search datasets...", a dropdown for "Order by:" set to "Popular", and a section titled "197,990 datasets found". On the left side of this section is a map filter interface with a "Filter by location" dropdown, a map of the United States, and "Topics" filters for "A-Z" and "1-9". The dataset list includes "College Scorecard" (2128 recent views), "Pittsburgh Wards Map" (1435 recent views), and "Demographic Statistics By Zip Code" (1399 recent views). Each entry shows a brief description and available formats like HTML, CSV, JSON, and XML. On the right side of the dataset list, there are three vertical filters labeled "Federal", "County", and "City".



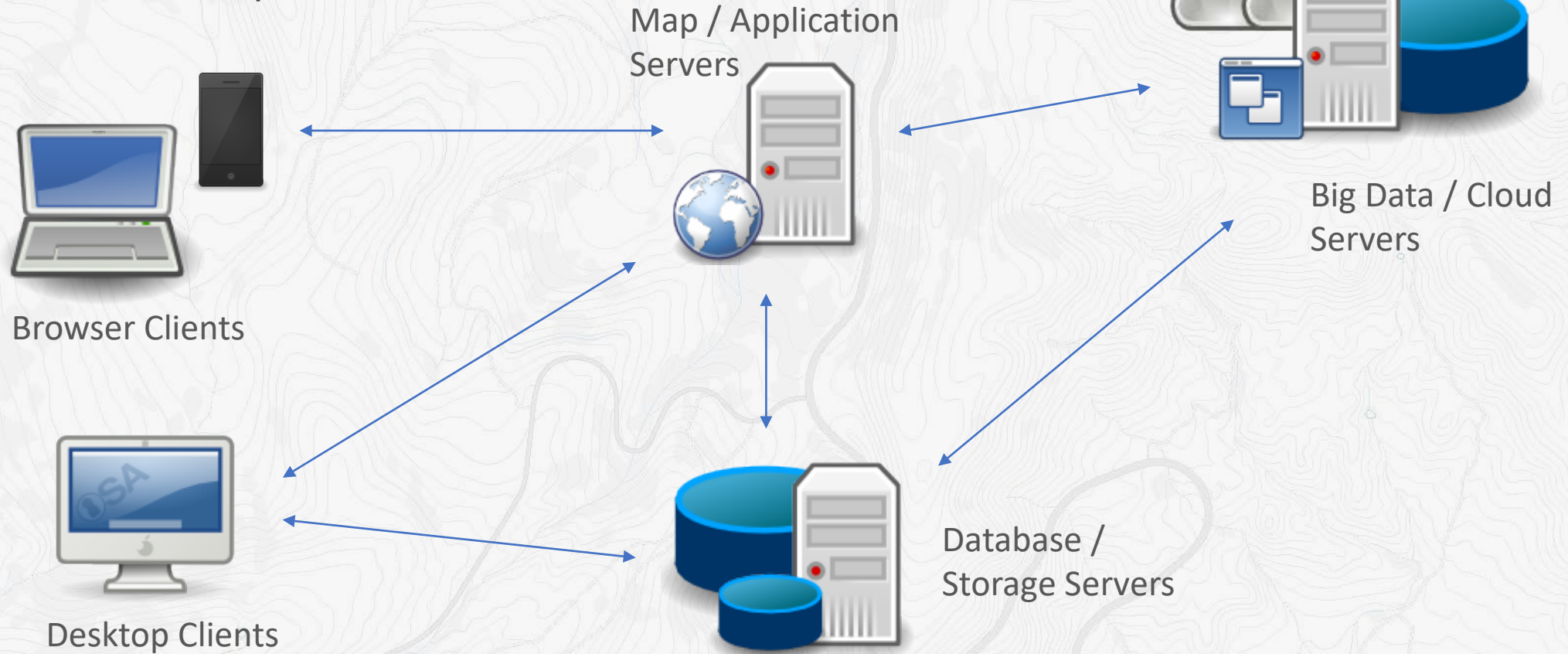
# Programming



So many more...









An aerial view of a city with a network of glowing white lines and nodes overlaid, symbolizing connectivity and data flow. The lines connect various points across the cityscape, which includes skyscrapers, a river, and a highway.

# Thinking Open: A Hybrid Approach to Implementing Open GIS [connect.boundlessgeo.com](http://connect.boundlessgeo.com)